

#### ABSTRACT OF THE DISCLOSURE

In a charge amount detection circuit, one part of circuit elements constituting a low pass filter circuit and one part of circuit elements constituting a voltage amplifier circuit are commonly use. A charge sensitive amplifier is followed by the low pass filter circuit and the voltage amplifier circuit, respectively, in this order. Since the low pass filter circuit is provided so as to share one part of circuit elements of the voltage amplifier circuit, it is possible to suppress the enlargement of the chip size due to the provision of LPF as much as possible so as to suppress the rise of the chip cost as much as possible.